4.11 TRANSPORTATION

This section provides an evaluation of the proposed project's traffic impacts based on the results of the *San Quentin State Prison, Central Health Services Center Transportation Impact Analysis* by DKS Associates in May 2007. A copy of this report is included in Appendix F. This analysis is based on data collected January 2007; site visits conducted March 2007; correspondence with the City of Larkspur and the City of San Rafael; and incorporation, where appropriate, of data from local and regional transportation studies. Additionally, past traffic reports for other projects at San Quentin State Prison (SQSP) have been prepared and are summarized below as relevant to the proposed Central Health Service Center (CHSC).

The proposed project site is not located within 2 miles of a public or private airport and would not construct facilities that would interfere with airport operations. The project would not change any existing access points (i.e., East Gate, West Gate) or create new access points to SQSP such that it would create hazardous design features or interfere with emergency access to the project site during project operation. Further, the project would not alter any existing alternative transportation facilities (i.e., pedestrian, bicycle, ferry service, bus stops). As such, these issues are not evaluated further in this DEIR. However, where appropriate, this section describes the existing transportation facilities near the proposed project site.

4.11.1 EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

Regional access to SQSP and the project site is provided by Interstate 580 (I-580) and U.S. Highway 101 (U.S. 101). Direct access to SQSP is provided by Main Street at the East Gate entrance of SQSP through the residential community of San Quentin Village and by Sir Francis Drake Boulevard at the West Gate entrance. The East Gate currently serves as the main access point for staff and visitors of SQSP, while the West Gate provides access for commercial vehicles, the delivery of goods and material, and residents living in on-site housing at SQSP. Permanent and construction access to the project would be via the West Gate entrance. Both the East and West Gates are staffed by correctional officers 24 hours a day, 7 days a week.

The regional and local roadways that could be affected by project traffic are described in more detail below and illustrated in Exhibit 4.11-1.

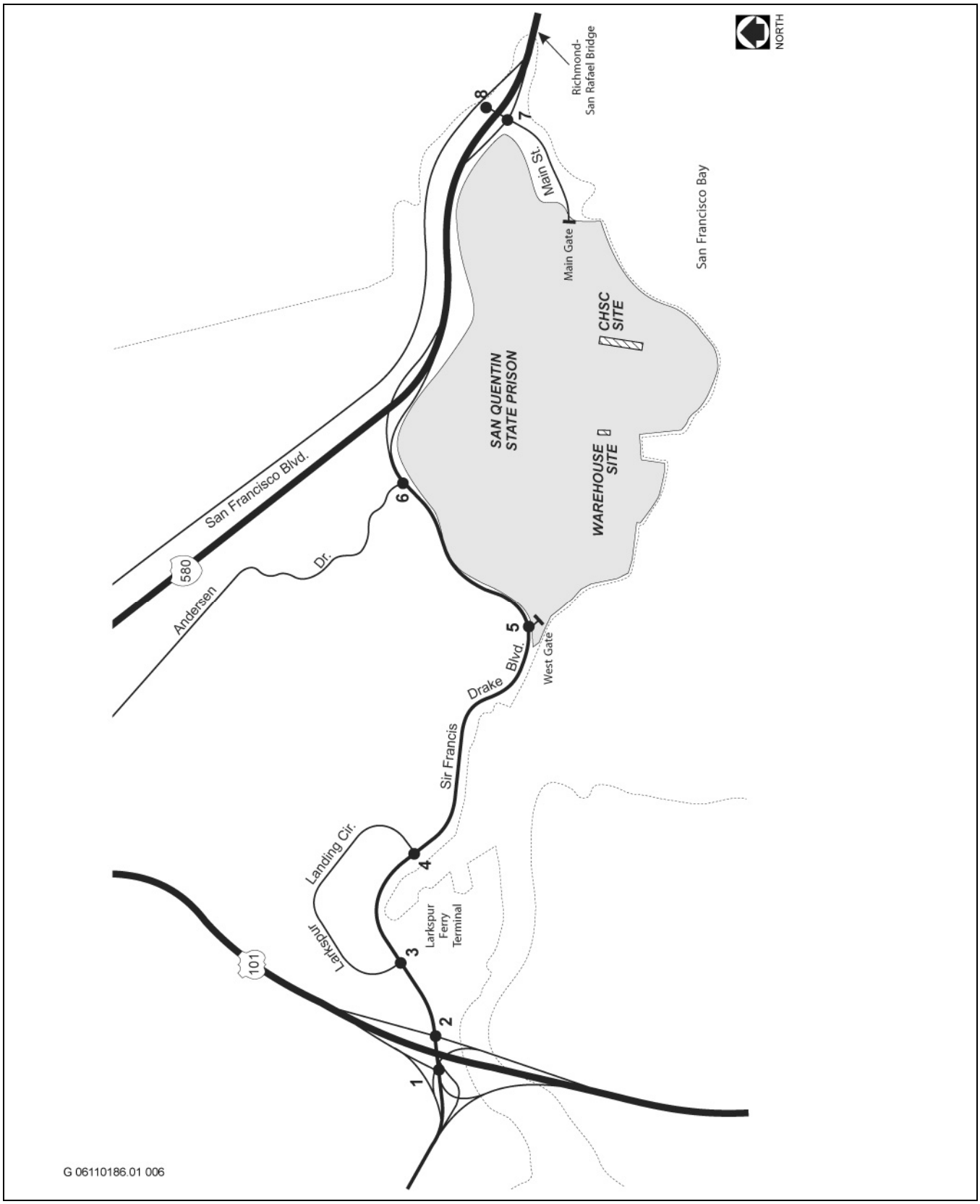
Regional Roadways

U.S. Highway 101

This highway extends from Los Angeles in the south to the Oregon state border in the north. In the vicinity of SQSP, U.S. 101 runs north and south and includes six mixed-flow lanes (three in each direction); one high occupancy vehicle lane is provided in the southbound direction, south of Sir Francis Drake Boulevard. U.S. 101 provides access to the project vicinity via an interchange with Sir Francis Drake Boulevard. This roadway is part of the Marin County Congestion Management Agency's 2003 Congestion Management Program (CMP) (discussed below) network.

Interstate 580

This facility extends from the city of Tracy to the San Francisco Bay Area. I-580 intersects with I-5, I-205, I-80, and U.S. 101. In the vicinity of SQSP, I-580 runs east and west and includes four mixed-flow lanes (two in each direction). I-580 provides access to the project vicinity via on- and off-ramps at San Francisco Boulevard/Main Street and Sir Francis Drake Boulevard, and access to the East Bay where it forms the Richmond–San Rafael Bridge. This roadway is part of the Marin County Congestion Management Agency's 2003 CMP network.



Source: DKS Associates

Existing Roadway Network **Exhibit 4.11-1**

Sir Francis Drake Boulevard

This roadway extends from the San Quentin Peninsula in the east to its terminus at Shoreline Highway near the Point Reyes National Forest, in the west. In the vicinity of SQSP, Sir Francis Drake Boulevard is a two-lane undivided roadway (one lane in each direction) and has a posted speed limit of 45 miles per hour (mph). In the city of Larkspur, Sir Francis Drake Boulevard is a four-lane (two lanes in each direction) principal arterial with a posted speed limit of 40 mph. This roadway is part of the Marin County Congestion Management Agency's 2003 CMP network.

Local Roadways

Larkspur Landing Circle

Larkspur Landing Circle is a four-lane (two lanes in each direction) residential/commercial street serving the Larkspur Landing Shopping Center. This loop road has a posted speed limit of 25 mph and is north of Sir Francis Drake Boulevard and east of U.S. 101. It has two signalized access points to Sir Francis Drake Boulevard: Larkspur Landing East and Larkspur Landing West. Larkspur Landing West also serves the Larkspur Ferry Terminal located south of Sir Francis Drake Boulevard.

Main Street

Main Street is a two-lane minor roadway adjacent to SQSP's East Gate. It extends from San Francisco Boulevard in the east to the SQSP East Gate entrance. Main Street can be accessed via the I-580 on- and off-ramps at the San Francisco Boulevard/Main Street exit. Main Street provides access homes in the residential community of San Quentin Village and access to SQSP.

Andersen Drive

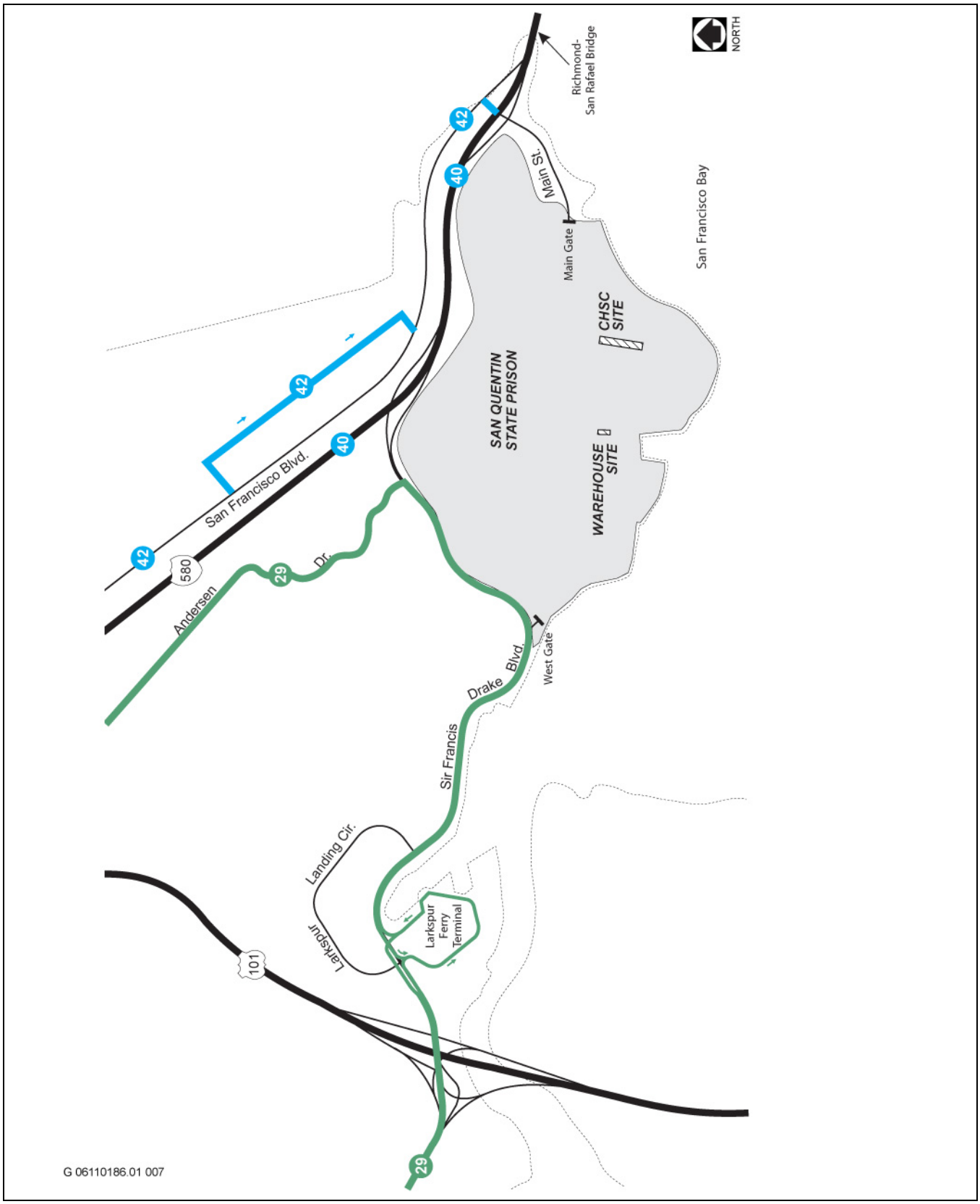
Andersen Drive runs north and south and consists of two lanes (one lane in each direction). It connects Sir Francis Drake Boulevard to Bellam Boulevard in San Rafael and continues on to end at Second Street in San Rafael, where it becomes A Street. It has a posted speed limit of 25 mph.

EXISTING TRANSIT NETWORK

Bus Transit and Paratransit Service

Golden Gate Transit currently provides regional fixed-route bus service in San Francisco, Marin, and Sonoma counties. Limited service is also available between San Rafael in central Marin and the El Cerrito/Del Norte Bay Area Rapid Transit station in the East Bay (Contra Costa County) via Golden Gate Transit. Limited local service is provided within Marin County, under a contract with the Marin County Transit District.

Golden Gate Transit's Bus Route 29 provides local daily bus (fixed-route) service to SQSP, stopping at a bus stop located at the intersection of Sir Francis Drake Boulevard and the West Gate entrance to SQSP. Route 29 travels along Sir Francis Drake Boulevard and operates on weekdays between 6:40 a.m. to 10:15 p.m. in the eastbound direction and from 7:20 a.m. to 11:00 p.m. in the westbound direction. On Saturdays, Route 29 bus service is provided from 7:15 a.m. to 10:15 p.m. in the eastbound direction and from 7:55 a.m. to 10:55 p.m. in the westbound direction. No Sunday service is provided. (Golden Gate Transit 2007) Exhibit 4.11-2 illustrates the bus transit facilities in the project vicinity.



Source: DKS Associates

Existing Bus Transit Facilities **Exhibit 4.11-2**

Golden Gate Transit also provides inter-county paratransit service (door-to-door) in the vicinity of SQSP. Paratransit service is operated by Whistlestop Wheels for the same operational hours as the basic fixed route bus-route transit service.

Ferry Service

Golden Gate Ferry currently provides daily ferry service between the cities of San Francisco and Larkspur in central Marin County, and between San Francisco and Sausalito in southern Marin County. The Larkspur Ferry Terminal is located approximately two miles west of SQSP. Ferry service is provided from the Larkspur Ferry Terminal to the San Francisco Ferry Terminal between 5:50 a.m. and 8:50 p.m. on weekdays and from 9:40 a.m. to 5:30 p.m. on weekends and holidays. Short-term and long-term parking areas are provided at the Larkspur Ferry Terminal (Golden Gate Ferry 2006).

EXISTING BICYCLE AND PEDESTRIAN CIRCULATION

The *2000 Marin County Bicycle and Pedestrian Master Plan* identifies the pedestrian and bicycle facilities in the vicinity of SQSP. The existing bicycle system consists of three facility classifications:

- Class I facilities (bike path) are paved facilities that are physically separated from roadways used by motor vehicles by space or a physical barrier and are designated for exclusive bicycle and pedestrian use.

- Class II facilities (bike lane) are lanes on the outside edge of roadways reserved for the exclusive use of bicycles and designated with special signing and pavement markings.

- Class III facilities (bike route) are roadways recommended for use by bicycles and often connect roadways with bike lanes and bike paths. Bike routes are designated with signs.

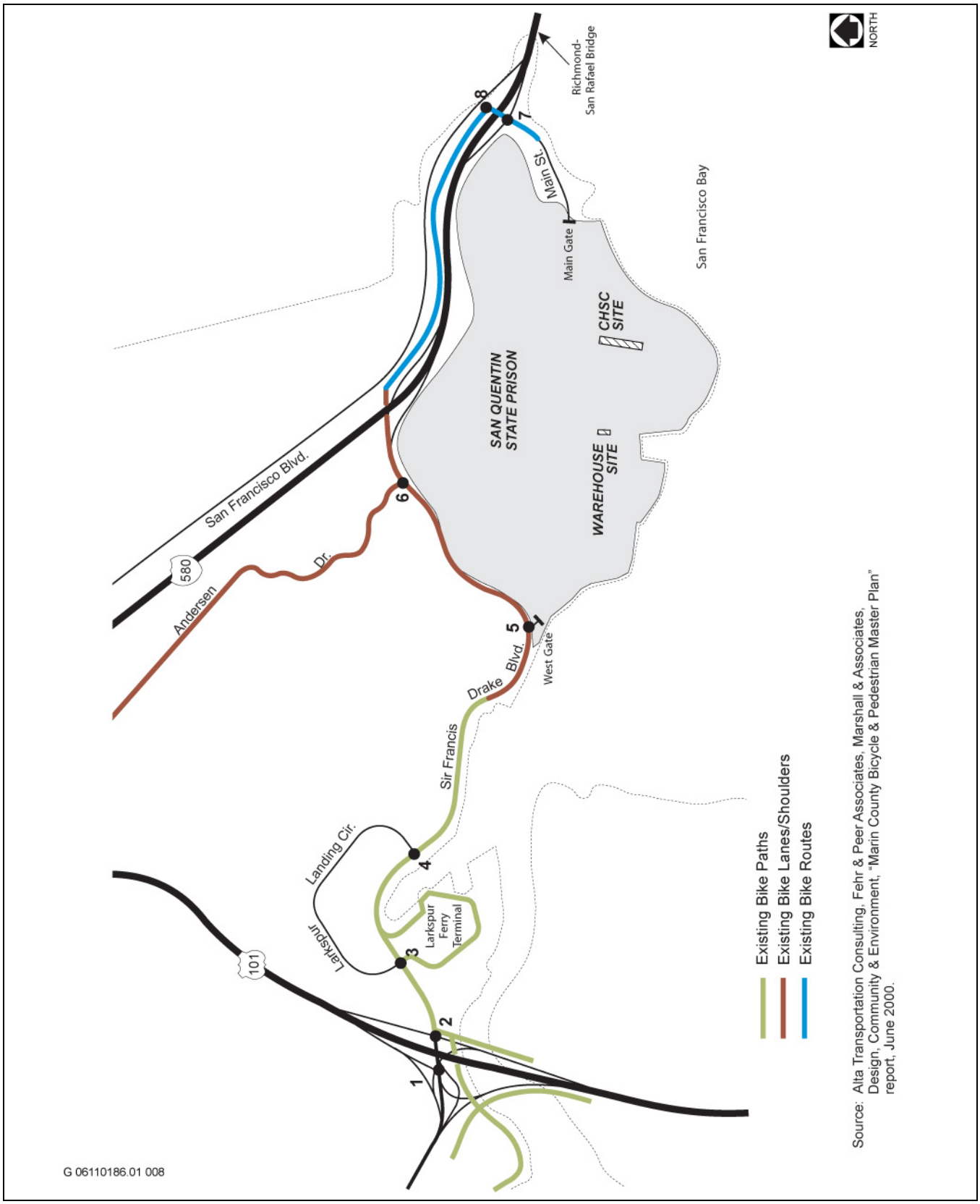
The existing bicycle facilities map, as illustrated in the *2000 Marin County Bicycle and Pedestrian Master Plan*, identifies Sir Francis Drake Boulevard as a major bicycle facility in the vicinity of the project site. Sir Francis Drake Boulevard provides bike paths, bike lanes, and a segment of the road is designated as a bike route. Based on field observations, Andersen Drive provides bike lanes in each travel direction. Exhibit 4.11-3 illustrates the bicycle facilities in the vicinity of the project site.

Pedestrian facilities within the vicinity of SQSP include crosswalks, sidewalks, and pedestrian signals at the Larkspur Landing Circle east and west intersections with Sir Francis Drake Boulevard. No pedestrian facilities are provided along Sir Francis Drake Boulevard near West Gate.

EXISTING PARKING FACILITIES

SQSP provides several designated, paved, and unpaved parking areas. A parking survey was conducted by DKS Associates to determine the number of on-site parking spaces at SQSP. In general, staff and visitor parking areas are provided near the East Gate entrance. A total 623 designated spaces are provided near the East Gate and include the following:

- main employee parking lot (383 spaces),
- visitor parking lot (82 spaces),
- overflow parking lot (91 spaces),
- maintenance and emergency vehicles parking lot (10 spaces), and
- staff and personnel parking lot with handicap parking spaces (57 spaces).



Source: DKS Associates

Existing Bicycle Facilities **Exhibit 4.11-3**

Designated parking areas are provided in other areas of SQSP including 218 spaces located near the West Gate entrance. In general, these spaces provide parking for prison-related vehicles and staff vehicles associated with prison facilities located in the western portion of SQSP. These areas include parking for:

- designated state vehicles (135 spaces),
- recreational vehicles (42 spaces), and
- H-Unit (SQSP prison facility) (41 spaces).

On-street parking is permitted along Sir Francis Drake Boulevard immediately adjacent to the West Gate entrance. This area is used infrequently during typical weekday and weekend conditions.

LEVELS OF SERVICE

The ability of an intersection to accommodate vehicles moving through the intersection is described in terms of the amount of delay that an average vehicle experiences at the intersection before it moves in its desired direction. The level of service (LOS) of an intersection is a measurement of delay at the intersection and the ability of the intersection to accommodate traffic volumes.

Traffic delay is defined as the total elapsed time (seconds per vehicle) when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position. LOS uses letters A through F (lowest to highest traffic congestion, respectively) to indicate the amount of congestion and delay. Table 4.11-1 defines LOS for signalized intersections and Table 4.11-2 defines LOS for unsignalized intersections.

Operating conditions for existing intersections were evaluated for the weekday a.m. peak hours (generally 7:00 a.m. to 9:00 a.m.), the midday peak hours (generally 1:30 p.m. to 3:30 p.m.), and the p.m. peak hours (generally 4:00 p.m. to 6:00 p.m.). The a.m. and p.m. peak hours were evaluated because, during these periods, regional and local roadways near SQSP experience their highest traffic volumes. The midday peak hour was evaluated because shift changes at SQSP are occurring during this period and trips on local roadways are expected to be temporarily increased.

Table 4.11-1
Signalized Intersection Level of Service Definitions

Level of Service	Avg. Delay (seconds per vehicle)	Description
A	≤ 5.0	Free flow; insignificant delays
B	5.1–15.0	Stable flow, but speeds are beginning to be restricted by traffic condition; slight delays
C	15.1–25.0	Stable flow, but most drivers cannot select their own speeds and feel somewhat restricted; acceptable delays
D	25.1–40.0	Approaching unstable flow, and drivers have difficulty maneuvering; tolerable delays
E	40.1–60.0	Unstable flow with stop and go; delays
F	≥ 60.0	Total breakdown; congested conditions with excessive delays

Source: DKS 2007

Table 4.11-2 Unsignalized Intersection Level of Service Definition, Two-Way Stop & All-Way Stop Controlled Intersections		
Level of Service	**Average Total Delay (seconds per vehicle)**	**Description**
A	≤ 10	Little or no delay
B	> 10 and ≤ 15	Short traffic delay
C	> 15 and ≤ 25	Average traffic delay
D	> 25 and ≤ 35	Long traffic delay
E	> 35 and ≤ 50	Very long traffic delay
F	> 50	Extreme delays potentially affecting other traffic movements in the intersection
Source: DKS 2007		

Based on observations and consultation with the City of Larkspur and City of San Rafael, the following eight intersections (i.e., study intersections) were selected for evaluation in this analysis:

1. U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard
2. U.S. 101 northbound on- and off-ramp/Sir Francis Drake Boulevard
3. Larkspur Landing Circle (west)/Sir Francis Drake Boulevard
4. Larkspur Landing Circle (east)/Sir Francis Drake Boulevard
5. West Gate entrance/Sir Francis Drake Boulevard
6. Andersen Drive/Sir Francis Drake Boulevard
7. Main Street/I-580 eastbound on- and off-ramp
8. Main Street/I-580 westbound off-ramp

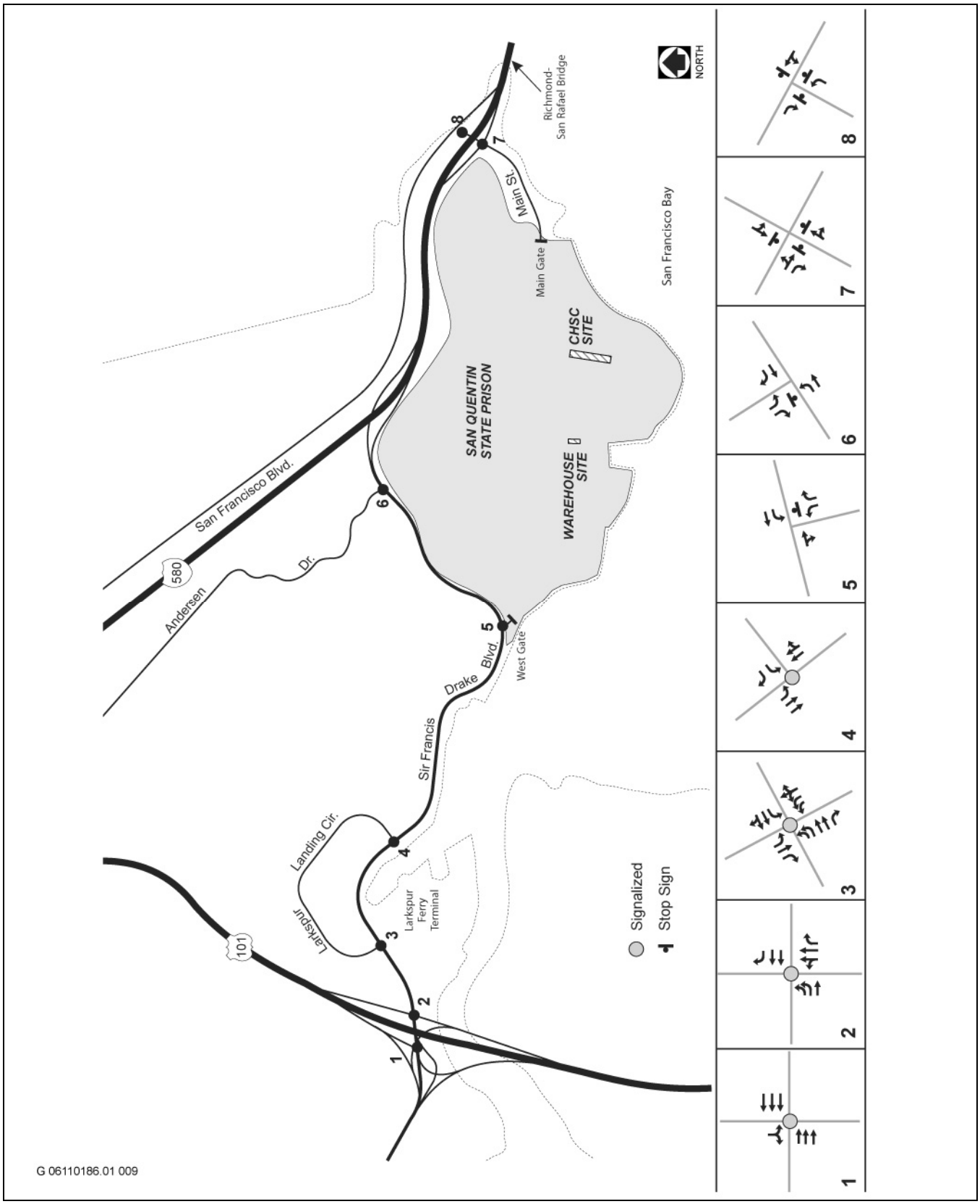
The location and existing controls at these intersections are presented in Exhibit 4.11-4. Vehicle turning movements at these intersections were measured in January 2007.

Methodology

The signalized study intersections are all located in the city of Larkspur. This study represents the City of Larkspur's preferred methodology for intersection LOS analysis. Based on direction from the City of Larkspur's representative traffic engineer (Robert L. Harrison, consultant engineer, cited in DKS 2007) during preparation of the Condemned Inmate Complex (CIC) EIR (2005), the City of Larkspur's preferred method is the *1994 Highway Capacity Manual* operations method for signalized intersections, and the *2000 Highway Capacity Manual* for unsignalized intersections. A peak hour factor was applied to each of the analyzed intersections for the 15 minutes of peak traffic of the a.m., midday, p.m., and weekend midday peak-hour period.

The analysis methodology used to designate intersection LOS in the City of San Rafael is the *2000 Highway Capacity Manual* operations methods for unsignalized intersections; there are no signalized intersections from San Rafael in this analysis.

Specific details on this methodology can be found in the traffic analysis for the SQSP CHSC (Appendix F) (DKS 2007).



Source: DKS Associates

Existing Study Intersections and Traffic Controls **Exhibit 4.11-4**

Existing Roadway Level of Service

The existing traffic operations during the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours at the study intersections are shown in Table 4.11-3 and illustrated in Exhibits 4.11-5 and 4.11-6.

Table 4.11-3
Traffic Operating Conditions Existing Scenario

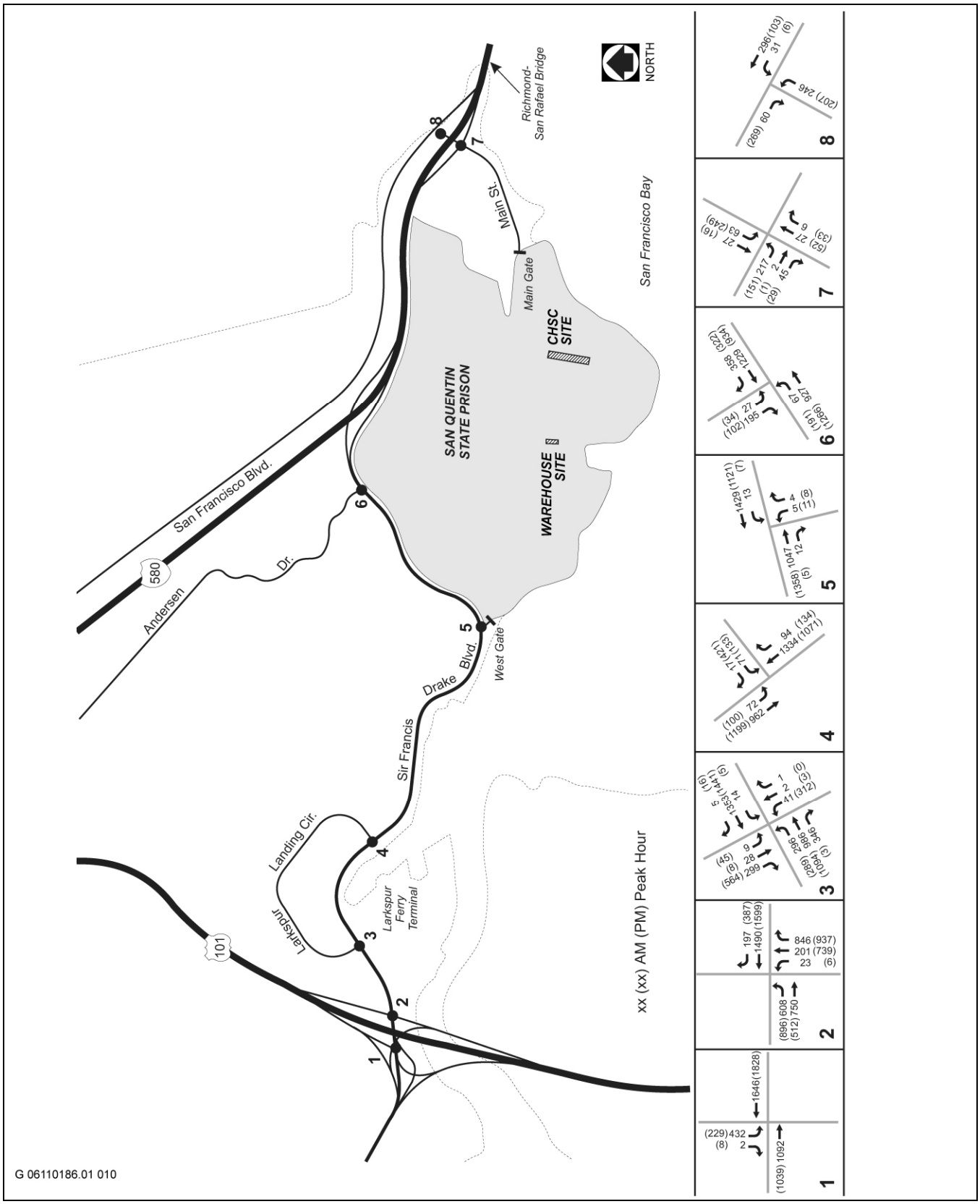
#	Intersection	Weekday						Weekend	
		a.m. Peak		Midday		p.m.		Midday	
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS
1	U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard	13.9	B	5.2	B	7.6	B	10.1	B
2	U.S. 101 northbound on- and off-ramp/Sir Francis Drake Boulevard	15.4	C	19.7	C	55.9	E	21.0	C
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard	15.5	C	18.6	C	32.8	D	18.7	C
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard	5.1	B	9.8	B	17.3	C	11.8	B
5*	San Quentin West Gate/Sir Francis Drake Boulevard	> 50	F	> 50	F	> 50	F	> 50	F
6*	Andersen Drive/Sir Francis Drake Boulevard[1]	> 50	F	> 50	F	> 50	F	> 50	F
7*	Main Street/I-580 eastbound on- and off-ramp[1]	9.9	A	10.5	B	10.5	B	9.2	A
8*	Main Street/I-580 westbound off-ramp[1]	11.1	B	11.3	B	9.2	A	9.9	A

Notes: Avg. Delay = average delay in seconds per vehicle; LOS = level of service.
* Unsignalized Intersection. LOS based on average delay (seconds per vehicle).
[1] City of San Rafael Intersection
Source: DKS 2007

Based on applicable intersection standards, all study intersections currently operate at an acceptable LOS under existing conditions, with the exception of the San Quentin West Gate/Sir Francis Drake Boulevard and the Anderson Drive/Sir Francis Drake Boulevard intersections. These intersections operate at LOS F during the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours. Although the San Quentin West Gate/Sir Francis Drake Boulevard intersection operates with only slight delays, the northbound left-turning vehicles coming out of SQSP at the West Gate have difficulty finding gaps through traffic on Sir Francis Drake Boulevard, resulting in an LOS F. Similar to the San Quentin West Gate/Sir Francis Drake Boulevard intersection, the Andersen Drive/Sir Francis Drake Boulevard intersection operates with slight delays, but the southbound left-turning vehicles from Andersen Drive have difficulty finding gaps in the traffic on Sir Francis Drake Boulevard, resulting in an LOS F.

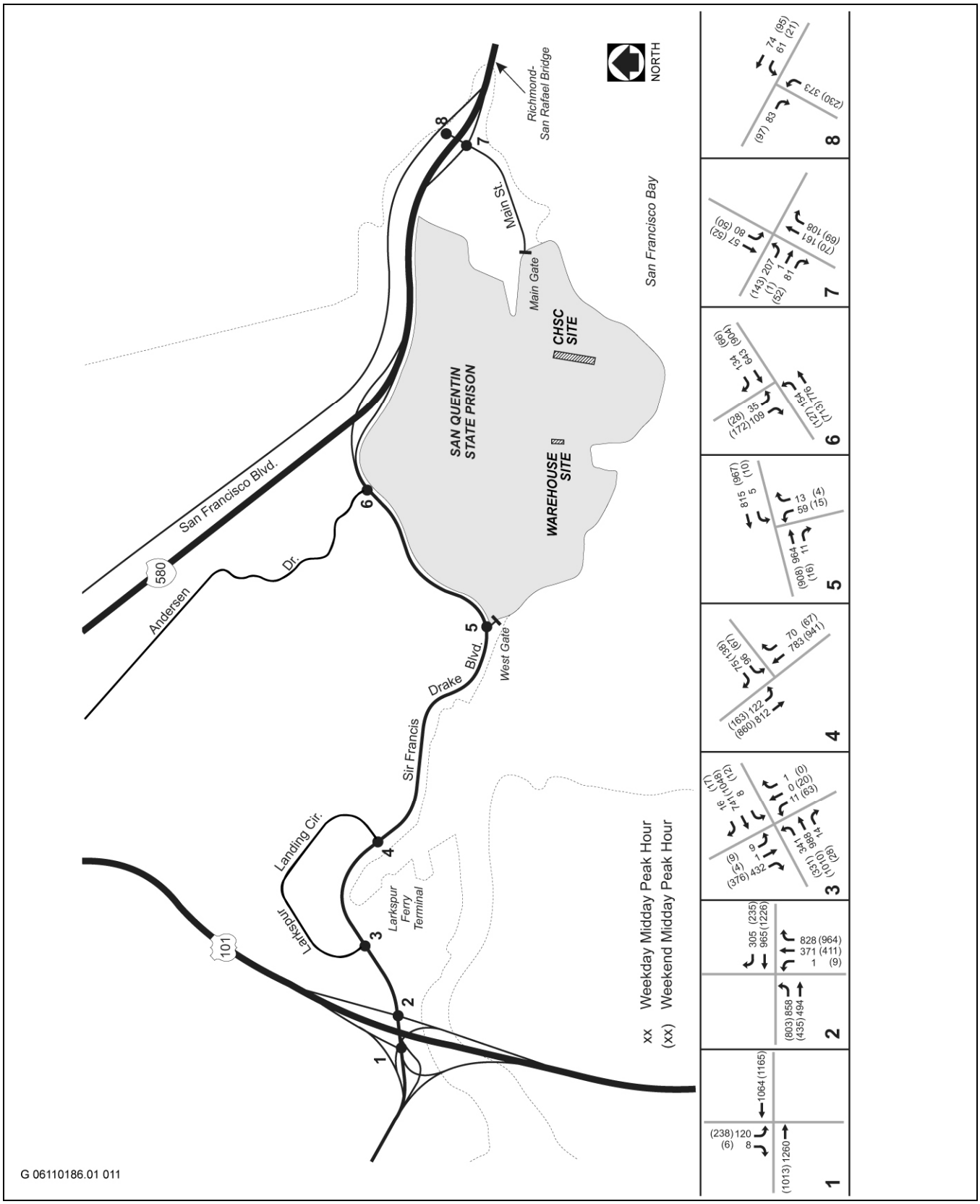
Background LOS

Background conditions represent the traffic expected to be generated by approved and planned projects that would complete construction and be operational before completion of the proposed CHSC project (anticipated to be complete in 2010) plus the turning movement volumes that currently exist at the study intersections. Based on consultation with the City of Larkspur, the City of San Rafael, and Marin County staff, the following projects were considered in the background scenarios: 2000 Larkspur Landing Circle, Monohan Pacific Project (Larkspur



Source: DKS Associates

Existing Roadway Traffic Volumes-Weekday AM and PM Peak Hour **Exhibit 4.11-5**



Source: DKS Associates

Existing Roadway Traffic Volumes-Weekday and Weekend Midday Peak Hour **Exhibit 4.11-6**

Landing Parcels 19 and 21), Target Shopping Center (San Rafael), Extended Stay Hotel (San Rafael), and 2350 Kerner Office Buildings (San Rafael). These projects are the only planned cumulative projects that would result in cumulative impacts to roadways near the project site. A description of these projects can be found in Chapter 5, Cumulative Impacts. No other cumulative projects have been identified based on review of Marin County's Proposed Development 42 Report (Marin County 2006) and conversations with staff of the City of Larkspur and City of San Rafael. As such, the background condition is also representative of the cumulative traffic impacts that would occur under future conditions without implementation of the proposed project. In addition to these projects, the CIC project approved at SQSP would add cumulatively to traffic impacts; this project is considered in Chapter 5.

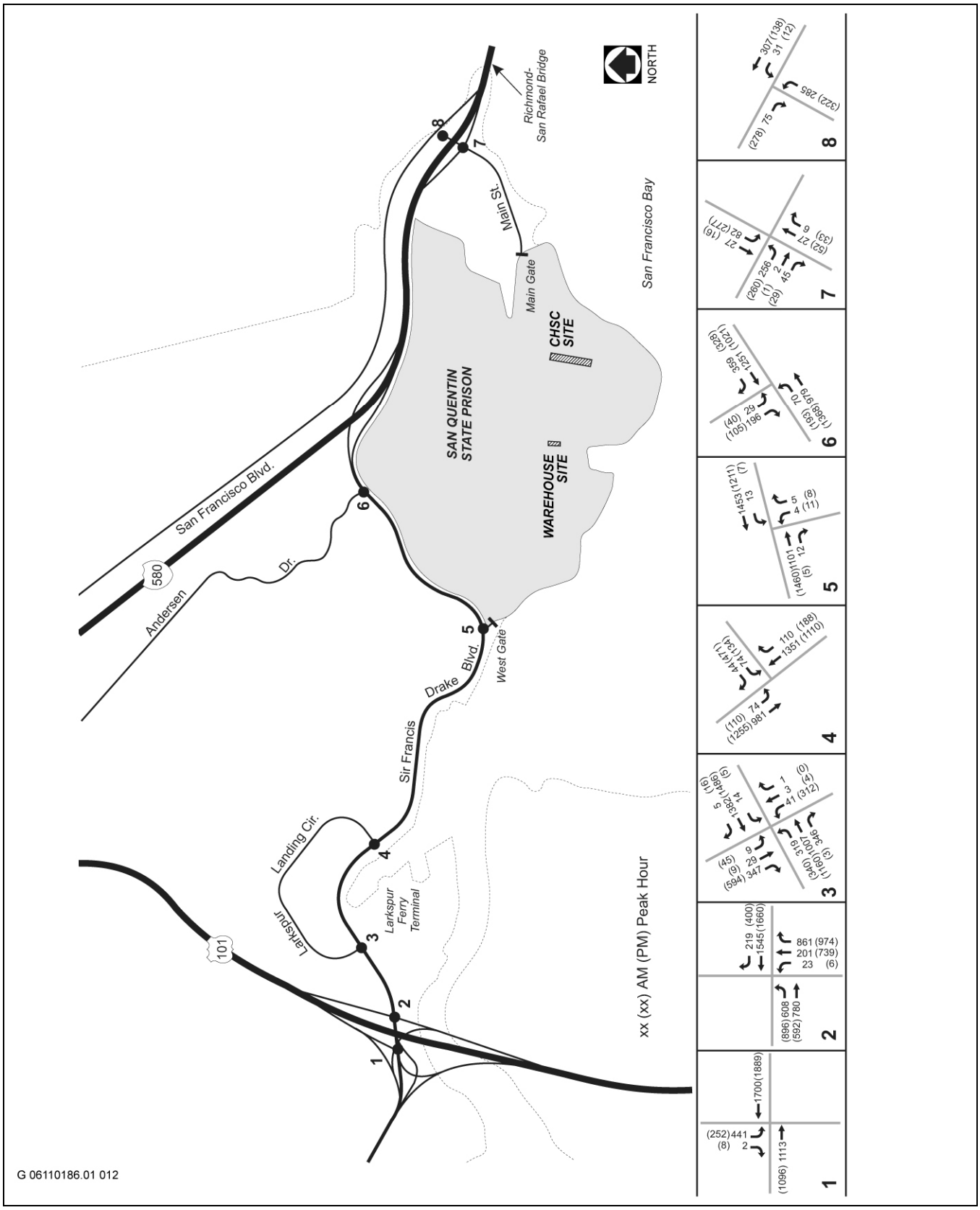
The background traffic conditions during the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours at the eight study intersections are shown in Table 4.11-4 and illustrated in Exhibits 4.11-7 and 4.11-8.

Table 4.11-4
Traffic Operating Conditions Background Scenario

#	Intersection	Weekday						Weekend	
		a.m. Peak		Midday		p.m.		Midday	
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS
1	U.S. 101 SB off-ramp/Sir Francis Drake Bouldevard[3]	14	B	5.3	B	8.2	B	10.3	B
2	U.S. 101 NB on- and off-ramp/Sir Francis Drake Boulevard[3]	15.4	C	20.6	C	61.5	F	22.3	C
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard[3]	16.8	C	19.2	C	40.8	E	19.4	C
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard[3]	5.5	B	10.0	B	18.8	C	11.9	B
5	San Quentin West Gate/Sir Francis Drake Boulevard[3]	> 50	F	> 50	F	> 50	F	> 50	F
6	Andersen Drive/Sir Francis Drake Boulevard[4]	> 50	F	> 50	F	> 50	F	> 50	F
7	Main Street/I-580 EB on/off ramp[4]	5.8	B	6.8	B	7.7	B	6.6	B
8	Main Street/I-580 WB off-ramp[4]	11.9	B	11.9	B	11.2	B	10.3	B

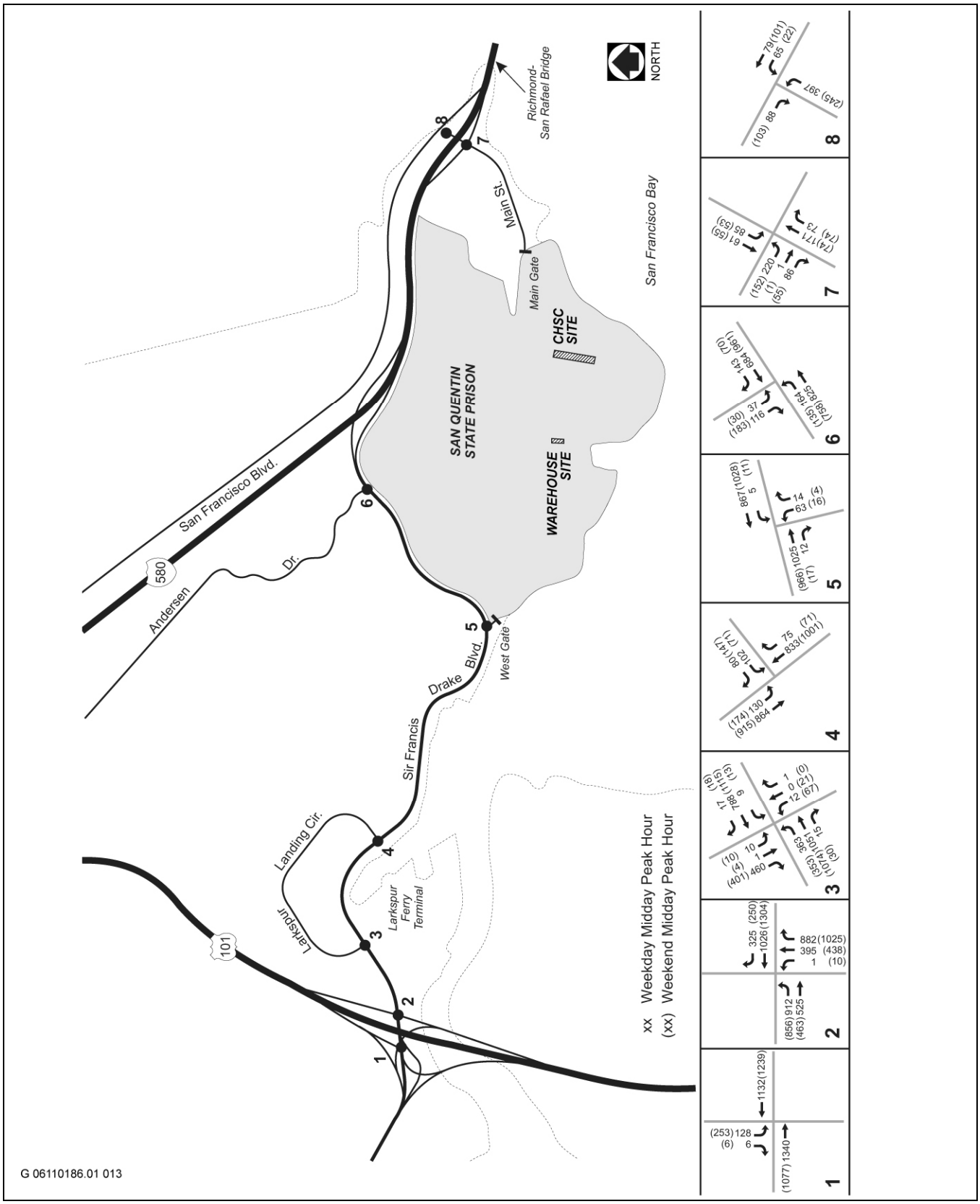
Notes: Intersections 1–4 and 7 are signalized; intersections 5, 6, and 8 are unsignalized under background conditions. Avg. Delay = average delay in seconds per vehicle; LOS = level of service.
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2004

Similar to existing conditions, all study intersections would continue to operate at an acceptable LOS for the background conditions, with the exception of the San Quentin West Gate/Sir Francis Drake Boulevard and the Anderson Drive/Sir Francis Drake Boulevard intersections.



Source: DKS Associates

Background Conditions-Weekday AM and PM **Exhibit 4.11-7**



Source: DKS Associates

Background Conditions-Weekday and Weekend Midday Peak Hour **Exhibit 4.11-8**

PROJECT CONDITIONS

Project conditions include background traffic conditions plus project-generated traffic estimated for the CHSC. The amount of traffic associated with a project is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. Trip generation is the process of predicting the number of peak hour trips the proposed project would contribute to the roadways, and whether these trips would be entering or exiting the site. After the number of trips is determined, the distribution process projects the direction of these trips used to approach and depart the site, from a regional perspective. Trip assignment involves determining which specific roadways a vehicle would use to travel between its origin and destination.

Trip Generation

Trip generation for the project was based on an estimate of trip generation rates based on a survey as part of the SQSP CIC EIR in 2004. As part of this analysis, a 24-hour traffic count and parking survey was conducted at SQSP's East Gate entrance for the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours (Table 4.11-5). Staffing and inmate levels at SQSP have not substantially changed since the traffic count data to determine trip generation rates was performed. As such, this information is relevant to the analysis prepared for the CHSC project. The number of additional employees for each of these time periods was multiplied by the trip rate for that time period, and then by the respective inbound or outbound trip rate (in or out percentage) for the same time period.

Trip Distribution

The directions of approach and departure for project trips were assumed to be consistent with travel patterns that were used in the SQSP CIC EIR, which were based on information related to employee's residences (by zip code) at the time of that analysis (2004) provided by the CDCR Facilities Management Division. The zip code data used for the CIC EIR were found to be consistent with current residence data (CDCR 2007).

Exhibit 4.11-9 illustrates the trip distribution of the project for the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours.

Trip Assignment

The directions of approach and departure for project trips were estimated based on the existing roadway network, the locations of the project access points, travel patterns, and locations of complementary land uses. The proportion of these trips that would travel through the study intersections was used for the intersection LOS analysis under the project condition. Based on the existing locations of employee and visitor parking facilities, projected new trips were assigned to and from the East Gate entrance via Main Street.

4.11.2 REGULATORY BACKGROUND

MARIN COUNTY CONGESTION MANAGEMENT PROGRAM

The Marin County Congestion Management Agency manages and administers a countywide CMP. The purposes of the CMP are to establish LOS standards for designated freeways, highways, and local arterials and to maintain or achieve those standards by increasing capacity of designated roads and/or managing travel demand on those roads. In the project vicinity, U.S. 101, I-580, and Sir Francis Drake Boulevard are part of the CMP's designated roadway network. The CMP has established minimum service standards for all roadways within its network.

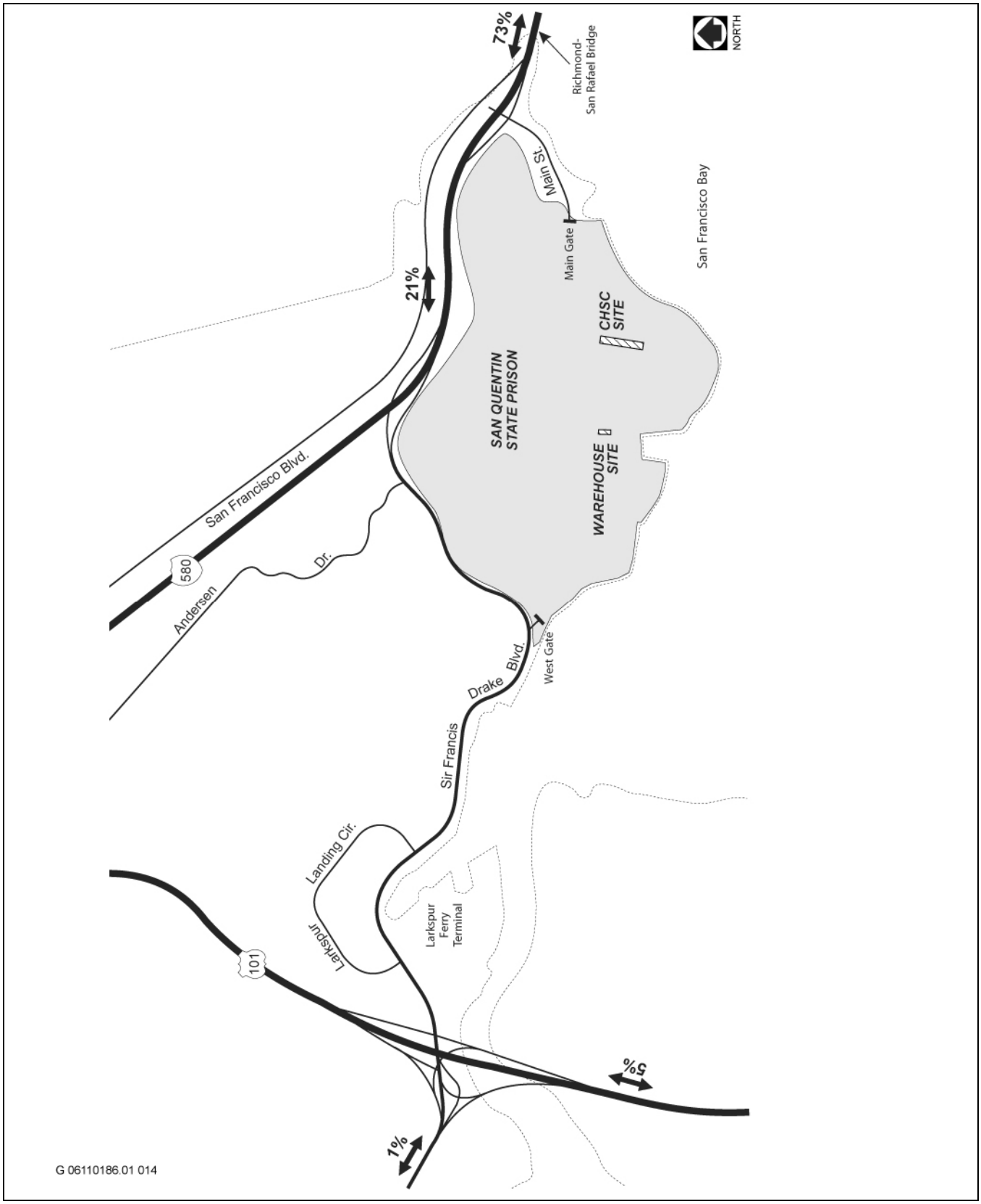
Significant impacts at CMP-designated intersections would occur when the addition of project traffic causes the LOS to drop below:

- LOS E for freeways and rural expressways (U.S. 101, I-580, and State Route 37), and
- LOS D for urban and suburban arterials.

Table 4.11-5
Project Trip Generation

Land Use	Units	Weekday																		Weekend					
		a.m. peak						midday peak						p.m. peak						midday peak					
		Size	Rate	%		Trips		Size	Rate	%		Trips		Size	Rate	%		Trips		Size	Rate	%		Trips	
				In	Out	In	Out			In	Out	In	Out			In	Out	In	Out			In	Out	In	Out
Prison	Employees[1]	25	0.11	70	30	1.9	.8	25	1.17	23	77	6.7	22.5	25	0.18	25	75	1.1	3.4	25	1.06	39	61	10.3	16.2
Total Trips						2	1					7	23					1	3					10	16

Notes: Rate = trips per employee.
[1] Net additional employees per each of the three employee shifts.
Source: DKS 2007



Source: DKS Associates

Project Trip Distribution **Exhibit 4.11-9**

City of Larkspur General Plan (1990)

The goal of the Circulation Element in the *City of Larkspur General Plan* is to provide safe and efficient transportation facilities that operate at acceptable LOS, while not degrading the quality of life in the community. The Circulation Element provides policies and programs for roadways, highways, and freeways.

Significant impacts at intersections located in the City of Larkspur (CMP and local) would occur when the addition of project traffic causes:

- the performance of intersections to fall below acceptable LOS standards (i.e., LOS D for signalized intersections and LOS C for unsignalized intersection), or otherwise significantly further reduce the system performance if it is already below the acceptable LOS, or when the addition of project traffic causes a significant degradation in service levels for the affected intersection at its peak traffic periods; or

- an increase in traffic volumes on any roadway segment or intersection approach by more than 10 vehicles during the peak hour or 1% of the existing volume, whichever is less.

City of San Rafael General Plan (2004)

San Rafael's key circulation improvement strategy is to create a safe and well-managed transportation network that provides greater choice for the traveler and limits, or even reduces, congestion on the its roads. The Circulation Element provides policies and programs for roadways, transit, pedestrians, bicyclists, and parking.

Significant impacts at intersections located in the City of San Rafael (CMP and local) would occur when the addition of project traffic causes:

- an unsignalized intersection with baseline traffic volumes operating at an acceptable LOS (i.e., LOS A, B, C, D, or E) to deteriorate to an unacceptable condition (i.e., LOS F), or

- an unsignalized intersection operating at unacceptable conditions (i.e., LOS F) to increase the average vehicle delay by five seconds or more.

4.11.3 ENVIRONMENTAL IMPACTS OF THE PROJECT

THRESHOLDS OF SIGNIFICANCE

The project would have a significant adverse traffic impact if it would:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

- exceed, either individually or cumulatively, a LOS standard established by local jurisdictions including the City of Larkspur or City of San Rafael, or

- result in inadequate parking capacity.

DEGRADATION OF LOS AT INTERSECTIONS

As described in Table 4.11-5, the project would result in the generation of 3 a.m. peak hour (two inbound and one outbound), 30 midday peak hour (seven inbound and 23 outbound), 4 p.m. peak hour (one inbound and three outbound), and 26 weekend midday peak hour (10 inbound and 16 outbound) trips. Intersection LOS calculations were conducted to evaluate intersection operations under project conditions. The results of the intersection LOS

analysis are summarized in Table 4.11-6. Table 4.11-7 presents the project's contribution to existing intersection volumes for the five study intersections located in the City of Larkspur. Tables 4.11-8 through 4.11-11 summarize the intersection operations under the existing, background, and project scenarios for the weekday a.m., weekday midday, weekday p.m., and weekend midday peak hours.

Similar to the existing and background conditions, all study intersections in the City of Larkspur, with the exception of the San Quentin West Gate/Sir Francis Drake Boulevard intersection, would operate under acceptable conditions. Although the San Quentin West Gate/Sir Francis Drake Boulevard would continue to operate at LOS F during all peak conditions evaluated, the project would only increase traffic volumes at this intersection by two vehicles or 0.10% (Table 4.11-7), which is less than City of Larkspur thresholds. Therefore, the project would not result in a significant traffic impact to this intersection.

Table 4.11-6
Traffic Operating Conditions Project Scenario

#	Intersection	Weekday						Weekend	
		a.m. Peak		Midday		p.m.		Midday	
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS
1	U.S. 101 southbound off-ramp/Sir Francis Drake Blvd[3]	14.0	B	5.3	B	8.2	B	10.3	B
2	U.S. 101 northbound on- and off-ramp/Sir Francis Drake Blvd[3]	15.4	C	20.6	C	61.5	F	22.4	C
3	Larkspur Landing Circle (west)/Sir Francis Drake Blvd[3]	16.8	C	19.2	C	40.8	E	19.4	C
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard[1]	5.5	B	10.0	B	18.8	C	11.9	B
5	San Quentin West Gate/Sir Francis Drake Boulevard [1]	> 50	F	> 50	F	> 50	F	> 50	F
6	Andersen Drive/Sir Francis Drake Boulevard [4]	> 50	F	> 50	F	> 50	F	> 50	F
7	Main Street/I-580 eastbound on-andoff-ramp[2]	5.8	B	6.8	B	7.7	B	6.6	B
8	Main Street/I-580 westbound off-ramp[2]	11.9	B	12.1	B	11.2	B	10.4	B

Notes: Intersections 1–4 and 7 are signalized; intersections 5, 6, and 8 are unsignalized. Avg. Delay = average delay in seconds per vehicle; LOS = level of service.
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2007

Table 4.11-7 Project Contribution to Existing Intersection Volumes						
#	Intersection		Existing Volumes	Project Trips	% of Existing Volume	Impact Yes/No
1	U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard	Weekday a.m.	3257	0	.00 %	No
		Weekday Midday	2615	1	.04 %	No
		Weekday p.m.	3246	0	.00 %	No
		Weekend Midday	2580	1	.04 %	No
2	U.S. 101 northbound on- and off–ramp/Sir Francis Drake Boulevard	Weekday a.m.	4237	0	.00 %	No
		Weekday Midday	4072	1	.02 %	No
		Weekday p.m.	5268	0	.00 %	No
		Weekend Midday	4350	2	.05 %	No
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard	Weekday a.m.	3505	0	.00 %	No
		Weekday Midday	2731	1	.04 %	No
		Weekday p.m.	3975	0	.00 %	No
		Weekend Midday	3110	2	.06 %	No
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard	Weekday a.m.	2636	0	.00 %	No
		Weekday Midday	2086	1	.05 %	No
		Weekday p.m.	3269	0	.00 %	No
		Weekend Midday	2382	2	.08 %	No
5	San Quentin West Gate/Sir Francis Drake Boulevard	Weekday a.m.	2590	0	.00 %	No
		Weekday Midday	1989	1	.05 %	No
		Weekday p.m.	2703	0	.00 %	No
		Weekend Midday	2045	2	.10 %	No

Table 4.11-8
Traffic Operating Conditions Weekday A.M. Peak Comparison

#	Intersection	Weekday						
		Existing		Background		Project		Impact (yes/no)
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	
1	U.S. 101 SB off-ramp & Sir Francis Drake Boulevard[1]	13.9	B	14.0	B	14.0	B	No
2	U.S. 101 NB on/off ramp & Sir Francis Drake Boulevard[1]	15.4	C	15.4	C	15.4	C	No
3	Larkspur Landing Cr (W) & Sir Francis Drake Boulevard[1]	15.5	C	16.8	C	16.8	C	No
4	Larkspur Landing Cr (E) & Sir Francis Drake Boulevard[1]	5.1	B	5.5	B	5.5	B	No
5	San Quentin West Gate & Sir Francis Drake Boulevard[1]	> 50	F	> 50	F	> 50	F	No
6	Andersen Drive & Sir Francis Drake Boulevard[2]	> 50	F	> 50	F	> 50	F	No
7	Main Street & I-580 EB on/off ramp[2]	9.9	A	5.8	B	5.8	B	No
8	Main Street & I-580 WB off-ramp[2]	11.1	B	11.9	B	11.9	B	No

Notes: Intersections 1–4 and 7 are signalized; intersections 5, 6, and 8 are unsignalized. Avg. Delay: average delay in seconds per vehicle; LOS: level of service.
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2007

Table 4.11-9
Traffic Operating Conditions Weekday Midday Peak Comparison

#	Intersection	Weekday						
		Existing		Background		Project		Impact (yes/no)
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	
1	U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard[1]	5.2	B	5.3	B	5.3	B	No
2	U.S. 101 northbound on- and off-ramp/Sir Francis Drake Boulevard[1]	19.7	C	20.6	C	20.6	C	No
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard[1]	18.6	C	19.2	C	19.2	C	No
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard[1]	9.8	B	10.0	B	10.0	B	No
5	San Quentin West Gate/Sir Francis Drake Boulevard[1]	>50	F	>50	F	>50	F	No
6	Andersen Drive/Sir Francis Drake Boulevard[2]	>50	F	>50	F	>50	F	No
7	Main Street/I-580 eastbound on- and off-ramp[2]	10.5	B	6.8	B	6.8	B	No
8	Main Street/I-580 westbound off-ramp[2]	11.3	B	11.9	B	12.1	B	No

Notes: Intersections 1–4 and 7 are signalized; intersections 5, 6 and 8 are unsignalized. Avg. Delay = average delay in seconds per vehicle; LOS = level of service
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2007

Table 4.11-10
Traffic Operating Conditions Weekday P.M. Peak Comparison

#	Intersection	Weekday						
		Existing		Background		Project		Impact (yes/no)
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	
1	U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard[1]	7.6	B	8.2	B	8.2	B	No
2	U.S. 101 northbound on- and off-ramp/Sir Francis Drake Boulevard[1]	55.9	E	61.5	F	61.5	F	No
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard[1]	32.8	D	40.8	E	40.8	E	No
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard[1]	17.3	C	18.8	C	18.8	C	No
5	San Quentin West Gate/Sir Francis Drake Boulevard[1]	> 50	F	> 50	F	> 50	F	No
6	Andersen Drive/Sir Francis Drake Boulevard[2]	> 50	F	> 50	F	> 50	F	No
7	Main Street/I-580 eastbound on- and off-ramp[2]	10.5	B	7.7	B	7.7	B	No
8	Main Street/I-580 westbound off-ramp[2]	9.2	A	11.2	B	11.2	B	No

Notes: Intersections 1-4 and 7 are signalized; Intersections 5, 6, and 8 are unsignalized. Avg. Delay = average delay in seconds per vehicle; LOS = level of service.
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2007

Table 4.11-11
Traffic Operating Conditions Weekend Midday Peak Comparison

#	Intersection	Weekend						
		Existing		Background		Project		Impact (yes/no)
		Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	
1	U.S. 101 southbound off-ramp/Sir Francis Drake Boulevard[3]	10.1	B	10.3	B	10.3	B	No
2	U.S. 101 northbound on- and off-ramp/Sir Francis Drake Boulevard[1]	21.0	C	22.4	C	22.4	C	No
3	Larkspur Landing Circle (west)/Sir Francis Drake Boulevard[1]	18.7	C	19.4	C	19.4	C	No
4	Larkspur Landing Circle (east)/Sir Francis Drake Boulevard[1]	11.8	B	11.9	B	11.9	B	No
5*	San Quentin West Gate/Sir Francis Drake Boulevard[1]	> 50	F	> 50	F	> 50	F	No
6*	Andersen Drive/Sir Francis Drake Boulevard[2]	> 50	F	> 50	F	> 50	F	No
7*	Main Street/I-580 eastbound on- and off-ramp[2]	9.2	A	6.5	B	6.6	B	No
8*	Main Street/I-580 westbound off-ramp[2]	9.9	A	10.3	B	10.4	B	No

* Intersections 1-4 and 7 are signalized; Intersections 5, 6, and 8 are unsignalized. Avg. Delay: average delay in seconds per vehicle; LOS: level of service.
[1] City of Larkspur Intersection
[2] City of San Rafael Intersection
Source: DKS 2007

With implementation of the project, the intersection of Andersen Drive/Sir Francis Drake Boulevard would continue to operate at LOS F during all peak hours evaluated. The project would increase the average delay of this intersection by less than 5 seconds, which is less than the City of San Rafael thresholds. Therefore, the project would not result in significant traffic impacts at this intersection.

With implementation of the project, all study intersections would operate at acceptable levels or under significance thresholds of the jurisdictions in which the intersections are located. Therefore, the project would result in a less-than-significant traffic impact (4.11-a).

CAUSE CONSTRUCTION-RELATED TRAFFIC IMPACTS

Construction Related Truck Traffic

The estimated number of truck trips is based on the quantity of material which is calculated based on 400 cubic yards (cy) of material demolished per day; which results in approximately 20 truck trips per day. The quantity of building demolition is approximately 5,000 cy, demolition of the retaining wall is less than 2,000 cy, and between 2,000 and 3,000 cy combined of earthwork would be hauled out and brought in. Based on this amount, totaling almost 10,000 cy, the total number of trucks needed would be 500 trucks during a period of 25 days, during the peak construction periods, or approximately 20 round trips per day (40 total trips).

The 40 truck trips per day would likely be spread throughout the day and it is anticipated that the total number of peak hour trips would be less than 10 vehicles. Based on the detailed operating conditions (See Appendix F), traffic traveling along Sir Francis Drake Boulevard would not experience any delay at the intersection of the West Gate Entrance. Vehicles traveling westbound, making a left-turn into the SQSP West Gate would experience average delays less than 15 seconds (LOS B or better) during each of the analysis scenarios. Vehicles exiting the West Gate, making left turns onto the westbound direction of Sir Francis Drake Boulevard typically experience the most delays, with operating conditions for this movement at LOS F for each of the analysis scenarios. Vehicles exiting the West Gate and turning right onto eastbound Sir Francis Drake Boulevard have a merge lane and delays are typically minimal.

Due to the low amount construction traffic during each of the peak hours (less than 10 vehicles), construction related truck traffic impacts are anticipated to be less than significant.

Any increased delays would be experienced by the exiting construction vehicles or trips related to employees exiting the project site only, and no increased delays are anticipated for the general traffic flow. No significant construction impacts to the existing roadway network are anticipated.

Construction Related Employee Trips

Construction period trip generation estimates were based on the information provided by CDCR Staff. The CHSC project would be constructed over a 30 month period. During the peak construction period (approximately 3 months), construction activities would require up to 180 construction workers that would commute to the site on the daily basis. These construction workers would result in the generation of 277 daily vehicle trips (139 inbound, 139 outbound). In addition, 40 one-way truck trips would occur on a daily basis for the hauling of project equipment and supplies, resulting in a total of 317 trips.

To provide additional information regarding construction-related vehicle trips and their potential affect on study area roadways and intersections during peak hours, a sensitivity analysis was conducted to determine how many additional vehicle trips could be added to the local roadway network before triggering impacts to area intersections. The sensitivity analysis included evaluation of the study area intersections. The peak-hour used in the analysis included the weekday AM (8:00 to 9:00 AM), and PM (5:00 to 6:00 PM) peak-hours. These times correspond to traffic counts and peaking characteristics for local traffic. Based on existing LOS and roadway

volumes of study area intersections, it was determined that during the AM peak hour, 90 vehicle limit on nearby freeway segments, which is equal to one percent of the peak-hour capacity on nearby freeway segments, would be the maximum threshold prior to triggering a significant impact. During the PM peak hour, the project could generate up to 74 peak-hour trips without adversely affecting any intersections or segments. PM peak-hour trips in excess of 74 trips would potentially result in significant and adverse traffic impacts at the intersection of Sir Francis Drake Boulevard and Andersen Drive. This impact results from delays experienced by traffic on Anderson Drive as it tries to access Sir Francis Drake Boulevard. This is an unsignalized intersection. Thus, mitigation would be required to constrain the construction traffic to below the threshold of 74 additional PM peak-hour trips or to otherwise improve access from Anderson Drive to Sir Francis Drake Boulevard. In addition to the intersection of Anderson Drive and Sir Francis Drake Boulevard, construction traffic could result in significant freeway impacts if it exceeds 90 p.m. peak hour trips.

During the peak construction period, if all construction workers arrived during the AM peak hour and departed during the PM peak hour, then the project would potentially result in as many as 149 trips during each of the peak hours (139 construction workers plus 10 truck trips). Although these construction trips would be temporary, they would potentially affect the operation of local roadway intersections because they would occur during peak traffic hours, which would be a significant construction-related traffic impact.

Project construction could result in up to 149 trips per hour which could substantially affect freeway operations as well as the operation of local roadway intersections, particularly the Anderson Drive/Sir Francis Drake Boulevard intersection (p.m. peak hour). This would be a significant construction-related traffic impact (4.11-b).

CAUSE PUBLIC TRANSIT IMPACTS

Based on the 2000 census data for Marin County, approximately 10% of the population uses public transit. Of those, 7% use bus/trolley services and 3% use ferry services as their mode of transportation. Assuming a similar transit-mode share, the project would generate less than 3 peak-hour bus-transit trips each weekday and weekend, and 2–3 peak-hour ferry-transit trips. These project-related transit trips would not be expected to substantially increase load factors on existing transit vehicles.

Because the project-generated transit trips would not be expected to substantially increase load factors on existing transit vehicles, this would be a less-than-significant public transit impact (4.11-c).

CAUSE OPERATIONAL PARKING IMPACTS

The project would increase the number of staff employed at SQSP by 75 employees, with these employees spread out evenly over three shifts (1.e. 25 per shift). Table 4.11-12 presents the supply and demand of existing parking facilities and was prepared based on a parking lot survey of parking areas at SQSP, which was conducted in 2004 and confirmed through additional surveys in 2007 (DKS 2007).

The project would result in demand for an additional 13 parking spaces during the weekday a.m. peak hours, 15 parking spaces during the weekday midday peak hours, 17 parking spaces during the p.m. peak hours, and 20 parking spaces during the weekend midday peak hours. These parking demand calculations assume that the number of spaces required is a total of approximately one space for every 3.7 employees (DKS 2004).

With implementation of project, no existing parking spaces would be removed and no new parking would be created. Overall, the project would result in a maximum increased demand for 20 parking spaces, which is substantially below available parking capacity at SQSP (see Table 4.11-12).

Table 4.11-12 Existing Parking Supply vs. Parking Demand						
Location		Parking Supply	Parking Demand			
			Weekday			Weekend
			a.m.	Midday	p.m.	Midday
East Gate	Employee	383	122	136	151	183
	Visitor	82	2	8	14	53
	Overflow	91	2	8	15	15
Total		556	126	152	180	251
West Gate	State Vehicles	135	61	67	74	83
	RVs	42	41	41	42	37
	H-Units	41	30	32	34	34
Total		218	132	140	150	154

Although the project would increase demands for parking by a maximum of 20 spaces, it is anticipated that the parking needs of the project would be accommodated in existing parking lots at SQSP. This would be a less-than-significant impact (4.11-d).

CAUSE CONSTRUCTION-RELATED PARKING IMPACTS

Under worst-case conditions, construction activities at the project site would require up to 180 construction workers that would commute to the site on a daily basis and up to 40 one-way truck trips. Assuming a parking demand of 0.5 for each construction trip (i.e., 180) and truck trip (i.e., 40), the project's construction-related parking demands would be approximately 110 spaces (i.e., [180+40]*0.5).

SQSP currently provides approximately 774 designated parking spaces at SQSP, and as many as 405 spaces are occupied during worst-case peak operational conditions. Therefore, approximately 369 spaces would be available for construction vehicles. While designated parking spaces would be available for construction vehicles, and CDCR would use all available space for the staging and parking of construction-related vehicles, it is unknown at this time if adequate space is available to accommodate all construction vehicles at SQSP in combination with other parking needs from existing operations.

While 369 designated parking spaces would be available for construction vehicles during the project construction period, it is unknown whether all construction vehicles would be able to be accommodated on at SQSP in combination with other parking needs from existing operations. This would be a potentially significant impact. (4.11-e).

DEGRADATION OF SITE ACCESS AND INTERNAL CIRCULATION

Staff working at the proposed CHSC or medical warehouse and emergency vehicles would access the site from Main Street (East Gate) and Sir Francis Drake Boulevard (West Gate). The minor increases in vehicular volumes (between 1 and 7 peak hour vehicles) are not anticipated to result in substantial access and circulation impacts. There are occasionally vehicle queues at the East Gate extending to Main Street. These queues would continue in the future, assuming no change would occur in the gate operation and security procedures. The number of project generated trips that are inbound and peak hour would range between two (weekday a.m.) and 10 (weekend midday) and, on average, one additional vehicle would arrive at the gate every 30 minutes in the weekday p.m. peak hour, and one every 6 minutes during the weekend midday period. Although no established significance criteria exists for vehicle queues on Main Street, the number of additional peak-hour vehicles is not anticipated to

result in additional safety issues or circulation difficulty because of the relatively low number of new peak hour trips.

Because the project would result in minor increases in vehicular volumes, the impact to site access and internal circulation would be less-than-significant (4.11-f).

4.11.4 PROPOSED MITIGATION MEASURES

LESS-THAN-SIGNIFICANT IMPACTS

The following impacts were identified as less than significant, and therefore no mitigation is required:

4.11-a: Degradation of LOS at Intersections
4.11-c: Cause Public Transit Impacts
4.11-d: Cause Operational Parking Impacts
4.11-f: Degradation of Site Access and Internal Circulation

SIGNIFICANT IMPACTS THAT CAN BE MITIGATED TO A LESS-THAN-SIGNIFICANT LEVEL

4.11-b: Cause Construction-Related Traffic Impacts

CDCR will prepare a construction traffic control plan to limit the arrival and departure of construction employees and vehicles during peak hours. At a minimum, for the majority of construction employees, arrival and departure schedules will be adjusted so the number of employees do not coincide with adjacent street peak hours (7:00 a.m. – 9:00 a.m., and 4:00 p.m. – 6:00 p.m.). It is proposed that the majority of construction employees arrive by 5:30 am, well in advance of the morning peak, and that the departure hours are staged to avoid the afternoon peak. For those construction workers that would access the site, the plan will also identify the maximum number of construction vehicles that can enter and exit SQSP during morning and evening periods. The CDCR construction traffic control plan has established a threshold of 90 for the maximum number of AM peak-hour construction-related traffic trips and 74 for the maximum number of PM peak hour trips. Alternatively, CDCR could implement traffic control (i.e., flag person) at the intersection of Sir Francis Drake Boulevard/Anderson Drive, which would allow p.m. peak hour traffic to be increased to 90 vehicles. These peak-hour totals include any construction-related traffic trips that would coincide temporally with CIC project construction.

Because peak hour construction related trips would be limited such that they do not exceed thresholds at which operational impacts to local roadways could occur, the impact would be reduced to a ***less-than-significant*** level.

4.11-e: Cause Construction-Related Parking Impacts

All parking will be accommodated on-site or at off-site areas designated for such uses (i.e., existing garages, lots). Construction employees will be instructed where acceptable SQSP designated parking facilities are located. If necessary, parking management practices such as valet or stacked parking on-site, or off-site parking with shuttles to and from the site will be implemented.

Because designated parking for construction traffic will be provided, impacts related to parking would be reduced to a ***less-than-significant*** level.